

obtain a point cloud of a scene including a plurality of points in a gravity-aligned coordinate system;
generate, based on the plurality of points, a line-space image, each pixel of the line-space image corresponding to a two-parameter representation of a respective line at a common height in the gravity-aligned coordinate system and each pixel having a pixel value; and
generate one or more vertical plane hypotheses based on the line-space image.

21. The non-transitory memory of claim **20**, wherein generating the line-space image includes:

selecting two points of the point cloud;
determining two parameters of a line projected to the common height in the gravity-aligned coordinate system defined by the two points; and
incrementing, by an amount, a pixel value of a pixel of the line-space image corresponding to the two parameters.

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